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Case Report

Pigmented basal cell carcinoma in skin of colour mimicking benign pigmented lesions: A case report

Julio Ribeiro[1], Nivesh Chotey[2], Ameshin Moodley[1]

[1]Discipline of Dermatology, School of Clinical Medicine, University of KwaZulu-Natal, Inkosi Albert Luthuli Central Hospital, Durban, South Africa, [2]Department of Anatomical Pathology, Lancet Anatomical Laboratories, Durban, South Africa

Corresponding author: Julio Ribeiro, MD, E-mail: j.ribeiro@hotmail.co.za

ABSTRACT

Basal cell carcinoma (BCC) is the most common cutaneous malignancy worldwide but occurs less frequently in individuals with darker skin phototypes due to the photoprotective effects of epidermal melanin. Clinical recognition may be challenging because classical features such as translucency and telangiectasia are often less apparent, while pigmentation may predominate. We report the case of a 78-year-old Indian male who presented with a slowly enlarging pigmented facial lesion of longstanding duration. Examination revealed a well-circumscribed hyperpigmented plaque anterior to the left ear. Histopathology demonstrated dermal nests of basaloid cells with peripheral palisading, peritumoural clefting, and associated melanin deposition, melanocytes, and melanophages, consistent with pigmented invasive nodular BCC. This case highlights the diagnostic challenges of BCC in skin of colour, where atypical presentation may mimic benign pigmented lesions. A high index of suspicion and a low threshold for biopsy are essential to facilitate timely diagnosis and appropriate management.

Key words: Pigmented basal cell carcinoma, Skin of colour, Facial pigmented lesion, Case report

INTRODUCTION

Skin cancer represents the most frequently diagnosed malignancy worldwide, with basal cell carcinoma accounting for the majority of cases [1]. The incidence of BCC is markedly lower in individuals with darker skin phototypes, largely due to the photoprotective effects of epidermal melanin [2-4]. Consequently, BCCs are less frequently considered in the differential diagnosis of pigmented lesions in these populations. Despite the lower incidence, delayed diagnosis of skin cancers in individuals with darker skin has been reported due to reduced clinical suspicion and variable clinical presentation [2-4].

CASE REPORT

A 78-year-old Indian male presented with an enlarging, darkly pigmented lesion on the left side of his face. He first noted the lesion approximately ten years earlier, but over the preceding six months observed gradual enlargement, prompting clinical assessment.

His medical history included ischaemic heart disease, essential hypertension, and cigarette smoking. He had previously undergone coronary artery bypass surgery. There was no personal or family history of skin cancer, and he denied pain, bleeding, ulceration, or constitutional symptoms.

On examination, there was a solitary, well-circumscribed, thin hyperpigmented plaque with a flat to cobblestone surface, anterior to the left ear (Fig. 1). The lesion was asymptomatic and non-ulcerated. No regional lymphadenopathy was present.

A thorough full-body skin examination was performed and revealed no additional suspicious lesions or evidence of other cutaneous malignancies.

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Figure 1: Localised pigmented lesion on the left side of the face.

The differential diagnosis included a seborrhoeic keratosis; solar lentigo, acquired benign melanocytic naevus; pigmented basal cell carcinoma; superficial spreading malignant melanoma.

A 3 mm punch biopsy was performed. Histological examination revealed a dermal-based tumour composed of nests of basaloid cells with a high nuclear-to-cytoplasmic ratio, peripheral palisading, and peritumoural clefting, with associated aggregates of melanin, melanocytes, and melanophages (Fig. 2). These findings were in keeping with a pigmented invasive nodular basal cell carcinoma. No perineural or lymphovascular invasion was identified.

Following confirmation of the diagnosis, the patient was referred to the Plastic Surgery service for definitive surgical excision of the lesion with appropriate margins.

The patient remains under clinical follow-up. No additional cutaneous malignancies were identified on further surveillance.

DISCUSSION

Basal cell carcinoma (BCC) is the most common cutaneous malignancy worldwide, accounting

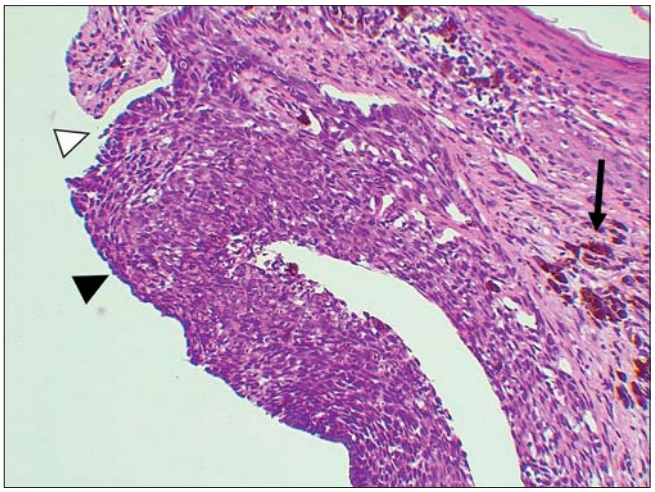

Figure 2: Haematoxylin and eosin–stained section demonstrating a dermal basaloid tumour, peritumoural clefting, and associated melanophages.

for approximately 80% of non-melanoma skin cancers [1]. Despite its high global incidence, BCC occurs far less frequently in individuals with darker skin phototypes [2-4]. This reduced incidence is largely attributed to the photoprotective effect of epidermal melanin, which provides significant protection against ultraviolet radiation-induced DNA damage [2,3]. Nevertheless, BCC remains an important diagnostic consideration in older individuals with skin of colour, particularly when lesions arise on chronically sun-exposed sites such as the head and neck, as cumulative ultraviolet radiation exposure is a major risk factor for its development; other recognised risk factors include advancing age, male sex, immunosuppression, prior ionising radiation exposure, and certain genetic predisposition syndromes [1–3]. In the present case, the patient's advanced age, male sex, and lesion location on a chronically sun-exposed facial site were consistent with these recognised risk factors.

In individuals with darker skin phototypes, the clinical presentation of BCC may differ from that observed in lighter skin. Classical features such as pearly borders, translucency, and telangiectasia may be less conspicuous, while pigmentation is more frequently observed [2,4,5]. Pigmented basal cell carcinoma represents a recognised clinical variant and has been reported in up to 50% of BCCs in darker-skinned populations, compared with approximately 5% in Caucasian populations [5,6]. This pigmentation results from the presence of melanin, melanocytes, and melanophages within tumour nests and the surrounding stroma [5]. Contemporary case reports

have further highlighted the diagnostic challenges posed by pigmented basal cell carcinoma, which may clinically resemble a variety of benign pigmented lesions and therefore require histopathological confirmation for definitive diagnosis [7].

The presence of pigmentation may create diagnostic uncertainty, as pigmented BCC can mimic a range of benign and malignant pigmented lesions including seborrhoeic keratosis, solar lentigo, melanocytic naevi, and malignant melanoma [5,6]. This overlap may contribute to diagnostic delay, particularly in patients with skin of colour where the index of suspicion for non-melanoma skin cancer is often lower [2-4]. Consequently, pigmented facial lesions in elderly patients should be approached with a high degree of clinical vigilance. Although most basal cell carcinomas arise on chronically sun-exposed sites, atypical presentations and locations have also been reported, further emphasising the variable clinical spectrum of this tumour [8].

Dermoscopy can assist in distinguishing pigmented BCC from melanocytic lesions by demonstrating characteristic structures such as blue-grey ovoid nests, leaf-like areas, spoke-wheel structures, concentric pigmentation, and arborising vessels [1,6]. These findings have been illustrated in recent dermoscopic reports of pigmented basal cell carcinoma and may provide valuable diagnostic clues when clinical examination alone is inconclusive [9]. However, these features may not always be readily identifiable, particularly in heavily pigmented lesions. Histopathological examination therefore remains the diagnostic gold standard [1].

Reports describing basal cell carcinoma in individuals with darker skin phototypes remain relatively limited in the literature, particularly from African clinical settings [2-4]. Despite its lower incidence in darker skin phototypes, basal cell carcinoma remains an important diagnostic consideration, particularly in elderly patients presenting with pigmented lesions on sun-exposed sites. Increased awareness of the variable clinical presentation of basal cell carcinoma in skin of colour is therefore essential in order to facilitate early recognition and appropriate management [2-4]. This case highlights the importance of maintaining a low threshold for biopsy when assessing pigmented facial lesions in patients with darker skin phototypes.

LEARNING POINTS

1. Basal cell carcinoma, although less common in darker skin phototypes, should remain an important diagnostic consideration in elderly patients presenting with pigmented lesions on chronically sun-exposed sites, particularly in the presence of recognised risk factors.
2. Pigmented basal cell carcinoma may clinically mimic benign pigmented lesions or melanoma, particularly in individuals with skin of colour.
3. Classical features of basal cell carcinoma, such as pearly translucency and telangiectasia, may be less conspicuous in darker skin types, which can contribute to diagnostic difficulty.
4. Dermoscopy may assist diagnosis by demonstrating characteristic features including blue–grey ovoid nests, leaf-like areas, spoke-wheel structures, and arborising vessels.
5. A low threshold for biopsy remains essential when evaluating persistent or atypical pigmented lesions in sun-exposed areas.

CONCLUSION

Pigmented basal cell carcinoma should remain an important diagnostic consideration in patients with skin of colour presenting with pigmented lesions on sun-exposed sites. Atypical clinical features and overlap with benign or melanocytic lesions may lead to diagnostic uncertainty and delay. Dermoscopy may provide valuable supportive features to aid differentiation; however, maintaining a high index of suspicion and a low threshold for biopsy remains essential to ensure accurate diagnosis and appropriate management.

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